

## CLAIMS

1. A complex of enzyme, protein and carrier comprising  
(1) a carrier;  
(2) an enzyme, two or more molecules of the enzyme being conjugated to the carrier in (1); and

(3) a protein with a specific binding potency to other <sup>112, 2nd</sup>  
substance(s), the protein being conjugated to at least one molecule of the two or more molecules of the enzyme in (2).

2. A complex of enzyme, protein and carrier comprising  
(1) a carrier;  
(2) an enzyme, two or more molecules of the enzyme being conjugated to the carrier in (1);

(3) a protein with a specific binding potency to other substance(s), the protein being conjugated to at least one molecule of the two or more molecules of the enzyme in (2);  
and

(4) the same protein as in (3), conjugated directly to the carrier in (1).

3. The complex of enzyme, protein and carrier according to claim 1, wherein the carrier has an average molecular weight of 5,000 to 500,000 Da, determined by gel filtration chromatography.

4. The complex of enzyme, protein and carrier according to claim 2, wherein the carrier has an average molecular weight of 5,000 to 500,000 Da, determined by gel filtration chromatography.

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5. The complex of enzyme, protein and carrier according to claim 3, wherein the carrier has an average molecular weight of 10,000 to 300,000 Da, determined by gel filtration chromatography.

6. The complex of enzyme, protein and carrier according to claim 4, wherein the carrier has an average molecular weight of 10,000 to 300,000 Da, determined by gel filtration chromatography.

7. The complex of enzyme, protein and carrier according to claim 1, wherein the carrier has two or more amino groups.

8. The complex of enzyme, protein and carrier according to claim 2, wherein the carrier has two or more amino groups.

9. The complex of enzyme, protein and carrier according to claim 1, wherein the carrier is one selected from the group consisting of (a) a peptide polymer having two or more basic amino groups and (b) a polysaccharide having introduced active groups, the kind of the active groups being at least one kind selected from the group consisting of amino group, aldehyde group and vinyl group.

10. The complex of enzyme, protein and carrier according to claim 2, wherein the carrier is one selected from the group consisting of (a) a peptide polymer having two or more basic amino groups and (b) a polysaccharide having introduced active groups, the kind of the active groups being at least one kind selected from the group consisting of amino group, aldehyde group and vinyl group.

11. The complex of enzyme, protein and carrier according

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to claim 9, wherein the carrier is polylysine.

12. The complex of enzyme, protein and carrier according to claim 10, wherein the carrier is polylysine.

13. The complex of enzyme, protein and carrier according to claim 1, wherein the enzyme is one selected from the group consisting of horse radish peroxidase, alkaline phosphatase,  $\beta$ -galactosidase and glucose oxidase.

14. The complex of enzyme, protein and carrier according to claim 2, wherein the enzyme is one selected from the group consisting of horse radish peroxidase, alkaline phosphatase,  $\beta$ -galactosidase and glucose oxidase.

15. The complex of enzyme, protein and carrier according to claim 1, wherein the protein with a specific binding potency to other substance(s) is at least one selected from the group consisting of an antibody and fragment(s) thereof.

16. The complex of enzyme, protein and carrier according to claim 2, wherein the protein with a specific binding potency to other substance(s) is at least one selected from the group consisting of an antibody and fragment(s) thereof.

17. The complex of enzyme, protein and carrier according to claim 15, wherein the antibody is a polyclonal antibody or monoclonal antibody.

18. The complex of enzyme, protein and carrier according to claim 16, wherein the antibody is a polyclonal antibody or monoclonal antibody.

19. The complex of enzyme, protein and carrier according to claim 15, wherein the fragment(s) means at least one

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20. The complex of enzyme, protein and carrier according to claim 16, wherein the fragment(s) means at least one selected from the group consisting of  $F(ab')_2$ , Fab' and Fabc'.

22. The complex of enzyme, protein and carrier according to claim 2, wherein the protein with a specific binding potency to other substance(s) is avidin or streptavidin.

24. An immunoassay kit comprising the complex according to claim 2.

26. The immunoassay kit according to claim 24, wherein the immunoassay is immunohistostaining or enzyme immunoassay.

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